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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,517	03/31/2004	Yuan Kong	MSFT 5106	6928
38779	7590	06/27/2006	EXAMINER	
SENNIGER POWERS (MSFT)			AKANBI, ISIAKA O	
ONE METROPOLITAN SQUARE, 16TH FLOOR				
ST. LOUIS, MO 63102			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/814,517	KONG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Isiaka O. Akanbi	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>26 January 2006</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement file 2 June 2004, 21 September 2005 and 26 January 2006 has been entered and reference considered by the examiner.

### *Drawings*

The examiner approves the drawings filed 31 March 2004.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18, 20 31 and 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (6,759,647 B2) in view of Matsuura (5,604,345) and, further in view of Ogawa (5,499,098)

Claims 1, 25 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Ito in view of Matsuura. The reference of Ito teaches of the features/method of claim 1, 25 and 38, comprising an encoded surface (9), a pointing device and a light source (2) for use with the encoded surface wherein said device is remote from said encoded surface (9) during pointing, a detector (4/5) associated with the light source for detecting at least a portion of said scattered light and a controller (11//12/14) associated with the detector and configured to respond to the detected portion of the scattered light to determine a position where the collimated light beam strikes the encoded surface, said position corresponding to where the device is pointing, however the reference of Ito is silent regarding the light source as being a collimated light source for projecting a collimated light beam onto said encoded surface. The reference of Matsuura teaches of a light source (10) for irradiating collimated light (figs. 1 and 8)(col. 3, line

56-60). It would have been obvious to one having ordinary skill in the art at the time of invention to use a collimated light source for projecting a collimated light beam onto said encoded for the purpose of providing a more accurate measurement/detection. Further, Ogawa shows light source (21)(fig. 7)(infrared LED)(col. 9, line 23-33) for projecting a light beam having a wavelength outside the visible light spectrum. It would have been obvious to one having ordinary skill in the art at the time of invention to provide a light source for projecting a light beam having a wavelength that is outside the visible light spectrum onto encoded surface for the purpose of providing a more accurate measurement/detection.

As to claims 2 and 26, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 above, the reference of Ito is silent regarding the type of collimated light beam as being (i.e. infrared light). The reference of Matsuura teaches of a light source (10) for irradiating collimated light (figs. 1 and 8)(col. 3, line 56-60)(col. 4, line 35-50). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a collimated light beam for the purpose of irradiating an encoded surface to provide a more accurate measurement/detection. Further, Further, Ogawa shows light source (21)(fig. 7)(infrared LED)(col. 9, line 23-33). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a light source that is infrared light for the purpose of providing a more accurate measurement/detection.

As to claims 3 and 27, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 2 and 26 above. The reference of Ito teaches of the features of claims 3 and 27, comprising an LED (col. 4, line 55-57), however the reference of Ito is silent regarding the LED as being collimated. The reference of Matsuura teaches of a LED (10/24) for irradiating collimated light (figs. 1 and 8)(col. 6, line 50). It would have been obvious to one having ordinary skill in the art at the time of invention to use a collimated light source that is one of (i.e. a resonant cavity light-emitting diode (RC-LED), a Vertical Cavity Surface-Emitting Laser (VCSEL), and an Edge Emitting Laser-Diode (EELD)) for the purpose of providing a more accurate measurement/detection.

As to claims 4 and 5, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 2 above, the reference of Ito teaches of the features of claim 4, comprising an encoded surface with a scattering feature (fig. 1), however the reference of Ito is silent regarding wherein

said encoded surface scatters only infrared light and wherein said encoded surface comprising at least one scattering feature that substantially scatters infrared light and at least one non-scattering feature that does not substantially scatter infrared light. The reference of Ogawa teaches of infrared LED (21)(fig. 7)(col. 9, line 23-33). It would have been obvious to one having ordinary skill in the art at the time of invention to provide an encoded surface that scatters only infrared light and that comprising at least one scattering feature that substantially scatters infrared light and at least one non-scattering feature that does not substantially scatter infrared light because there is no reason for the feature to be the same since they are independent of each other for the purpose of providing a more accurate measurement/detection.

As to claim 6, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 5 above, in addition Ito discloses at least one scattering feature (7/8) and said at least one non-scattering feature cooperate to create a pattern on said encoded surface (figs. 1 and 2)(col. 3, line 33-42)(col. 10, claims 2 and 3).

As to claim 7, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 5 above, the reference of Ito is silent regarding wherein said at least one scattering feature is an infrared coating. The reference of Ogawa teaches of infrared LED (21)(fig. 7)(col. 9, line 23-33). It would have been obvious to one having ordinary skill in the art at the time of invention to provide at least one scattering feature that is an infrared coating for the purpose of providing a more accurate measurement/detection.

As to claims 8 and 9, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 above, in addition Ito discloses wherein said encoded surface (9) is visible-light transparent and wherein said encoded surface is mountable on another surface (fig.1)(col. 4, line 55-57).

As to claims 10 and 11, Ito, Matsuura and Ogawa disclose everything claimed, the reference of Ito teaches of the features of claim 10 and 11, comprising a device (10) that is remote from the encoded surface (fig. 1), however the reference of Ito is silent regarding the device distance/dimension as being (i.e. at least 15 centimeters (6 inches)/ at least 90 centimeters (3 feet)) from the encoder surface because there is no reason for the distance/dimension to be the same since the position of the detector varies depending on the type of light beam use. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide device that is (i.e. at least 15 centimeters (6 inches)/ at

least 90 centimeters (3 feet)) from said encoded surface for the purpose of providing a more accurate measurement/detection.

As to claims 12-13 and 35-36, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 and 25 above, in addition Ito discloses wherein said position on said encoded surface is a relative position (fig. 1), wherein said controller (11) responds to the detected portion of the scattered light to determine any relative movement of the position where the collimated light beam strikes the encoded surface, which corresponds to any relative movement of where the device is pointing and wherein said position on said encoded surface is an absolute position corresponding to a location on said encoded surface (col. 5, line 3-14).

As to claims 14 and 28, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 and 25 above, the reference of Ito teaches of the features of claim 14 and 28, comprising a detection unit (11) for detecting portion of scattered light (col. 5, line 3-14), however the reference of Ito is silent regarding a filter for substantially filtering out light of a wavelength irrelevant to said detected portion of scattered light, thereby prohibiting said filtered out light from striking said detector. The use of filter to remove/attenuate particular wavelengths or frequencies while passing others is known in the art. The reference of Matsuura (figs. 5A and 5B)(col. 5, line 23-33) and Ogawa (23)(col. 9, line 23-33) teaches of filter. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide a filter for substantially filtering out light of a wavelength that is irrelevant to said detected portion of scattered light, thereby prohibiting said filtered out light from striking said detector for the purpose of providing a more accurate measurement/detection.

As to claims 15 and 29, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 and 25 above, in addition Ito discloses wherein said encoded surface is encoded with a digital pattern and wherein said controller is configured to determine position as a function of the digital pattern (col. 6, line 29-56)

As to claim 16, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 above, in addition Ito discloses wherein said encoded surface is incorporated into a display (13)(col. 5, line 11-12).

As to claims 17, 30 and 39, Ito, Matsuura and Ogawa disclose everything claimed, the reference of Ito teaches of the features of claim 17, 30 and 39, comprising controller (11/12) signals the display (13) to display an image corresponding to the position where the light beam

strikes the encoded surface (fig. 1)(col. 5, line 3-14), however the reference of Ito is silent regarding the light beam striking the encoded surface as being (i.e. collimated light beam). The reference of Matsuura teaches of a light source (10) for irradiating collimated light beam (figs. 1 and 8)(col. 3, line 56-60). It would have been obvious to one having ordinary skill in the art at the time of invention to use a collimated light beam for projecting/striking encoded surface for the purpose of providing a more accurate measurement/detection.

As to claims 18 and 31, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 17 above, in addition Ito discloses a position adjustment mechanism for manually adjusting the location of the image on the display (fig. 1)(col. 3, line 7-32)(col. 6, line 28-41)

As to claim 20, Ito, Matsuura and Ogawa disclose everything claimed, the reference of Ito teaches of the features of claim 20, comprising an encoded surface (fig. 1), however the reference of Ito is silent regarding the size/area of the encoded surface as being (i.e. at least 0.13 square meters (200 square inches)) because there is no reason for the size/area to be the same/fixed since the encoded surface varies depending on the type of light beam use. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide encoded surface that includes an area of (i.e. at least 0.13 square meters (200 square inches)) for the purpose of providing a more accurate measurement/detection.

As to claims 21, 22 and 37, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 17 above, in addition Ito discloses detector is a photodetector and photodetector comprising at least four elements for detecting at least a portion of said scattered light (col. 2, line 67-68)(fig. 4)(col. 4, line 67-col. 5, line 1-2).

As to claims 23 and 33, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 and 25 above, the reference of Ito teaches of the features of claim 23 and 33, comprising visible light source (2)(col. 4, line 56) for projecting a light beam onto said encoded surface (fig.1), however the reference of Ito is silent regarding the light source as being collimated light beam that strikes the encoded surface. The reference of Matsuura teaches of a light source (10) for irradiating collimated light (figs. 1 and 8)(col. 3, line 56-60). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a visible light source for projecting a visible light beam onto said encoded surface that is in substantially the same position on the encoded surface where the collimated light beam strikes the encoded surface for the purpose of providing a more accurate measurement/detection.

As to claims 24 and 34, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 1 and 25 above, the reference of Ito teaches of the features of claim 24 and 34, comprising light source (2)(col. 4, line 56) for projecting a light beam onto encoded surface and plurality of detector (fig. 1), however the reference of Ito is silent regarding a second collimated light source for projecting a second collimated light beam onto said encoded surface said encoded surface scattering the second collimated light beam striking said encoded surface and a second detector associated with the second collimated light source for detecting at least a portion of said scattered light. The reference of Matsuura teaches of collimated light source for irradiating collimated light with plurality of detectors (fig. 11). It would have been obvious to one having ordinary skill in the art at the time of invention to have two different light sources one for each part for the purpose of providing a more accurate measurement/detection.

As to claim 40, Ito, Matsuura and Ogawa disclose everything claimed, as applied to claim 38 above, the reference of Ito teaches of the features of claim 40, comprising utilizing said position information to execute a command on a computer (11) associated with said pointing device, said command corresponding to an item on a display (13) associated with said encoded surface (fig. 1)(col. 5, line 3-14) and a light source (2)(col. 4, line 56), however the reference of Ito is silent regarding the light source use to strikes the encoded surface as being (i.e. collimated). The reference of Matsuura teaches of a light source (10) for irradiating collimated light (figs. 1 and 8)(col. 3, line 56-60). It would have been obvious to one having ordinary skill in the art at the time of invention to provide item corresponding to the position where the collimated light beam strikes the encoded surface for the purpose of providing a more accurate measurement/detection.

Claims 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (6,759,647 B2) in view of Matsuura (5,604,345), further in view of Ogawa (5,499,098) and, in further view of the Applicant's Admitted Prior Art (A.P.A).

As to claims 19 and 32, as the combination of Ito, Matsuura and Ogawa discloses the claimed invention except for is silent regarding position adjustment mechanism is one of (i.e. a trackball and a touchpad), however the applicant discloses (page 8, par. 0027) that this is a well known. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Ito and Matsuura in conjunction with applicant

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indication of feature to provide position adjustment mechanism that is one of (i.e. a trackball and a touchpad) to meet the terms of the claims for the purpose of providing a more accurate detection. (see In Ex parte McGaughey, 6 USPQ2d 1334, 1337 (Bd. Pat. App. & Int.1988).

### **Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art pointing system/ method for determining a position where a collimated light beam of a pointing device strikes an encoded surface that may anticipate or obviate the claims of the applicant's invention.

### **Conclusion**

### **Fax/Telephone Information**

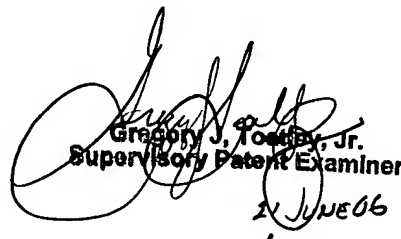
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

June 20, 2006

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
21 JUNE 06